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Long-Term Health Consequences and Sources of Health Care for RPOWs

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Summary

The goal of the Repatriated Prisoners of War (RPOW) program and the Center for Prisoner of War Studies is to evaluate the former prisoners and their experience—both in captivity and through repatriation and reintegration into society—to learn how to help others from future conflicts. Thus, the program and the center have two roles. The clinical role is the health evaluation of the RPOW population, and the research role is to learn from the POW experience to promote the well-being of past and future POWs. The program is administered by the Robert E. Mitchell Center for POW Studies at the Naval Operational Medical Institute at Pensacola, Florida.

This is a descriptive study of the general health status of prisoners of the Vietnam War, nearly 25 years after their repatriation. About 75 percent, or 498, of the surviving RPOWs provided information by responding to a health status survey. We compared various health status indicators of RPOWs with those of a control group (CG) of like-aged naval aviators. RPOWs were stratified on the basis of having been seen at the Mitchell Center for health care services, length of time that service was provided, whether the RPOW was aircrew, and where the RPOW was captured. The RPOWs who were not aircrew were mostly former U.S. Army enlisted personnel. The “where captured” variable was used to distinguish those captured in South Vietnam, where POWs received harsher treatment that could have long-term health consequences.

We have shown that the RPOWs are now in poorer health than those in the control group and a group of like-aged retired military personnel from the general population receiving health care from the military health care system under TRICARE. The non-aircrew group is now in significantly poorer health than either the Navy or Air Force pilots. We saw few differences in health status indicators between those captured in South Vietnam and North Vietnam, and between USAF and USN/USMC pilots.

Perhaps the best summary statistic that can be used to describe the average health status of the strata of the RPOW population is their overall self-evaluation. Table 1 shows the percentage from each group that rated their health as at least "good." These data suggest that most RPOWs consider themselves at least as healthy as like-aged retired military in the general population. Several of the groups, however, see their health below the level reported by the control group of Navy aviators.

Table 1. Percentage of group whose self-reported health status is good or better

Group	Percentage of group reporting good or better health
TRICARE retired males, 50 to 77 years of age ^a	79
Control group (CG)	89
Air officers	
Seen	82*
Not seen	86
Non-aircrew	61*
Where captured	
North Vietnam	80*
South Vietnam	80*
Pilots seen	
USAF	82*
USN/USMC	82*

a. Those receiving health care under the Department of Defense Military Health Care System, now TRICARE.

* Statistically significant ($p < .05$) difference from CG.

Introduction

Repatriation for Vietnam POWs began with Operation Homecoming in January 1973 and lasted until late May 1973. Captain Robert E. Mitchell and Captain Pat O'Connell represented the Navy at the Naval Aerospace Medical Research Laboratory (NAMRL) in the planning stage for Homecoming in 1972.

Captain Mitchell conducted the physical examination portion of the program for the Navy and Marine Corps personnel at NAMRL. In 1976, the Navy approved the selection of 138 matched controls to be compared over time with the 138-member Naval Marine Corps Prisoner of War group. Captain Mitchell conducted all POW examinations and assisted in the control group (CG) examinations from 1976 to 1979. In 1980, the Center for Prisoner of War Studies was discontinued (its charter was not renewed), and its records and archives were transferred to NAMRL. The RPOW program that Captain Mitchell established was transferred to the Naval Aerospace Medical Institute (NAMI), now the Naval Operational Medicine Institute (NOMI). Captain Mitchell retired from active duty and was retained as the Head, Special Studies Department, to continue the RPOW program. He is still active in the program as senior consultant to Special Studies.

In 1993, funding was provided for the U.S. Air Force to participate in the 20th-year evaluation. This began the participation of the Air Force POWs in 1994, which continues today with increasing numbers of Air Force RPOWs. In August 1997, the first of the Army RPOWs began to arrive for evaluations, making the program a true triservice effort.

January 1998 brought the dedication of the Robert E. Mitchell Center for Prisoner of War Studies. Research projects under way at this time include studies to determine whether the RPOW group has any increased incidence of carotid artery disease or any increased tendency toward diabetes. Studies planned for the near future include determining whether the calcium losses from starvation diets

experienced by the RPOWs in captivity persisted and whether they might affect bone density. Also under way are studies of psychological epidemiology of the RPOWs and a comparison of personality styles of the RPOWs of the three services and the comparison group. Many former POWs have been successful in later years, counting among their numbers Members of Congress, both House and Senate, Members of State Government, Officials in the Veterans' Administration, the first Ambassador to Hanoi, and various successful businessmen.

Clinical program participation

The clinical program has a high participation rate. About 55 percent of surviving RPOWs and control group members are seen at the Mitchell Center on a fairly regular basis. However, some RPOWs have not been seen since repatriation, or in many years. This leaves large gaps in their medical records and great uncertainty as to their health status. Medical records are important to providing continuity of care and delivering preventive services.

An important goal of the Mitchell Center is to maximize participation in the clinical program. In an effort to motivate those RPOWs to return to the Mitchell Center for a health assessment, and to update the medical records of all surviving RPOWs, the Center for Naval Analyses was asked to:

- Contact RPOWs not recently seen at the Mitchell Center to remind them of the health services available to them there
- Have all surviving RPOWs and CG members complete a health status questionnaire.

In all, three separate letters were sent (see the appendix).

Health status measurement

We used the Health Enrollment Assessment Review (HEAR), version 1.1, as the instrument for measuring the health status of the RPOWs and CG members. The HEAR instrument is a self-administered questionnaire that can be completed in 20-30 minutes. The HEAR represents the current best practice in health assessment. It was

initially developed for use in TRICARE Regions 4 and 6 by the Air Force's Office for Prevention and Health Services Assessment (OPHSA), the Centers for Disease Control and Prevention (CDC), and the Battelle Memorial Institute. Beneficiaries complete the HEAR at the time of enrollment into TRICARE, and their Primary Care Managers use it to assess their current health status and to recommend a course of action or treatment to appropriately manage existing diseases. Our description of the HEAR borrows heavily from the Project HEAR final report [1].

We used a scientific process to develop the survey, the algorithms, and associated computer software. The survey questions were taken from proven, validated, national health survey instruments. This process greatly enhanced validation and testing procedures and ensured data comparability to previously administered surveys.

The questionnaire was designed to have four functions:

1. Assess preventive service needs of enrollees.
2. Predict which enrollees potentially will use high levels of medical resources or primary care manager (PCM) time.
3. Recommend the appropriate level of primary care case management based on the complexity of medical care required.
4. Identify patients with high-risk behaviors who could benefit from counseling and health promotion activities.

Questionnaire contents

A discussion of HEAR 1.1 questionnaire content areas follows.

Prevention services

Immunizations, healthier lifestyles, or early detection and effective treatment can prevent or postpone many of the most serious disorders encountered in clinical practice. Yet the delivery of preventive services is often far from satisfactory. A report by CDC notes that in the United States six chronic diseases—heart disease, cancer, stroke, diabetes mellitus, chronic pulmonary disease, and chronic liver

disease—are among the major causes of death, disability, and medical expenditures. In 1988, these six diseases accounted for 71 percent of all deaths in the United States. Preventable risk factors for chronic diseases include cigarette smoking, high blood pressure, high blood cholesterol, obesity, physical inactivity, poor nutrition, heavy alcohol consumption, and failure to use screening tests, such as mammography and Pap smears [2].

Many categories of preventive and clinical services, often incorporated in the primary care survey were intentionally omitted from the HEAR survey. Criteria used to incorporate clinical preventive services include the following: (1) the condition (disease/risk factor) is important; (2) the screening test is relatively easy to administer; (3) the disease or risk factor has a recognizable presymptomatic state; and (4) an effective treatment regimen exists that reduces morbidity and mortality.

The next two subsections focus on areas included in the HEAR questionnaire examining the type, frequency, and delivery of clinical preventive services and patient education and counseling. Clinical preventive services consist of primary preventive measures, such as mammography and cholesterol screenings. Patient education and counseling are aimed at reducing risk factors for disease and promoting healthier lifestyles.

Clinical preventive services

The selection of clinical prevention services examined in the HEAR instrument was based on the TRICARE Prime Enhanced Benefits package and the requirements of TRICARE Region 6 Level Agent, OPHSA, and USAF Surgeon General staff personnel. The areas identified that require routine preventive care include:

- All respondents:
 - Blood pressure
 - Total blood cholesterol
 - Tetanus
 - Colorectal cancer

- Women only:
 - Clinical breast exam
 - Mammogram
 - Pap smear
- Men only: Testicular cancer.

Blood pressure

High blood pressure has been linked to coronary heart diseases (CHD). Results from the Framingham Heart Study have found that almost all people identified as suffering from high blood pressure can benefit from relatively benign types of interventions, such as exercise and dietary modification [3]. The HEAR survey includes six questions on blood pressure that have been used in the National Health Interview Survey (NHIS) and Put Prevention Into Practice (PPIP) surveys. The six questions establish whether a respondent (1) ever had his blood pressured checked, (2) currently suffers from hypertension, (3) is currently prescribed medication for hypertension, and (4) is compliant with the treatment regimen.

Total blood cholesterol

Screening for cholesterol is a highly effective mechanism for detecting hypercholesterolemia. High blood cholesterol levels have been implicated as a primary risk factor in a wide array of CHD. Systematic cholesterol screening is a feasible and effective mechanism for detecting elevated blood cholesterol. The HEAR survey includes three questions on blood cholesterol that have been used in the 1995 Behavioral Risk Factor Survey. The first question establishes whether a respondent has ever had his/her blood cholesterol checked, the second determines when a person was last tested, and the third ascertains whether a respondent currently suffers from high cholesterol.

Tetanus

More than 10 percent of the U.S. population is not properly immunized against tetanus. Those at greatest risk are females of any age, males older than 50, African-Americans from the rural South, and people without any military experience [4]. Although tetanus is a

rare disease in the United States, it has a high mortality rate that could easily be prevented through tetanus immunization. In the HEAR survey, we included a single question from the NHIS 1995 (Year 2000) Supplement: Part C - Clinical Preventive Services. This question is intended to establish whether a person has been immunized in the last 10 years, the recommended screening interval.

Colorectal cancer

In the United States, colorectal cancer is the second most common cause of cancer mortality after lung cancer. In 1994, an estimated 149,000 new cases were diagnosed, and an estimated 56,000 people died from the disease [5]. However, incidence and mortality rates have been steadily decreasing, reflecting improvements in primary prevention, early detection, and treatment. In the HEAR survey, we included one question to determine the time frame since a patient's last rectal exam. This question has been used in a health risk assessment instrument, Healthier People Network HRA.

Screening for cancer: Mammography, Pap smear, rectal and testicular exams

Malignant neoplasms are responsible for more than half a million deaths annually and 22.5 percent of all deaths in the United States. Cancer is the second leading causes of death overall and the leading cause of death among Americans aged 35 to 64 [6]. Data from the Surveillance, Epidemiology, and End Results (SEER) program of cancer registries indicate that the age-adjusted incidence rates for all cancers combined increased by 18.6 percent among males and 12.4 percent among females from 1975-1979 to 1987-1991. These increases are largely the result of rising rates for prostate cancer among men and breast and lung cancer among women. Office screening is the primary method for identifying cancer victims as early as possible. Appropriate screening tests should be rapid, simple, and inexpensive and should impose minimal discomfort.

Testicular cancer

Testicular cancer is a relatively uncommon disease with an incidence of only 3 per 100,000 men per year [7]. Nonetheless, testicular cancer represents the most common malignancy in men from age 15 to 35.

The survival rate for testicular cancer has undergone a dramatic increase from 10 percent in the 1970s to 90 percent in the 1990s, thanks to improvements in clinical practice that have made testicular cancer one of the most curable solid tumors. Systematic screening of all males 18 and older is the key to early detection. In the HEAR survey, we included one question explicitly developed for this survey. The question is intended to determine the time frame since the last testicular examination.

Patient education and counseling services

This section provides information to both patients and providers concerning high-risk modifiable behaviors. The questions and/or related scales were selected from previously validated instruments.

The smoking category concentrates on identifying respondents who smoke cigarettes exclusively. The HEAR designers deliberately did not query individuals concerning cigar, pipe, or smokeless tobacco use. It would have been necessary to include an additional five to six questions to ascertain the use of these related smoking products. Although brevity was not the sole criterion for including questions in the survey, it was felt that the risk factor/condition needed to be sufficiently prevalent to include this type of question. Therefore, the designers concentrated on identifying respondents who smoke cigarettes and disregarded the smaller proportion of patients who smoke other products. Furthermore, the algorithm used to determine patients' readiness for smoking cessations was based on cigarette use [8].

Nutrition was another category intentionally not addressed in the survey. To determine proper nutritional habits, one would need to include numerous questions that are subject to recall bias; respondents customarily have difficulty recalling their nutritional intake. The only questions indirectly related to dietary habits were three questions related to age, weight, and height, which are used to compute the algorithm for Body Mass Index (BMI). Although the BMI cannot detect nutritional deficiencies, it can reveal whether a respondent suffers from obesity.

Sensitive questions regarding sexual activities and illicit drug use were excluded from the HEAR survey. It was felt that people would not respond candidly to these personal questions, and it was more important to encourage them to complete the survey than to ask questions regarding personal aspects of their health behaviors. If respondents felt there were too many sensitive issues, they could potentially respond inaccurately to other less sensitive questions, such as alcohol use.

The remaining questions in the HEAR instrument cover six areas, as discussed below.

Exercise

Three questions assessed activity by measuring frequency, intensity, and duration of:

- Recreational exercise
- Physical work required as part of the job
- Physical work required as part of a main daily activity.

These questions, taken from the National Health Interview Survey, were considered to be especially applicable to a young, active-duty military population. They provide a broad-based definition of physical activity and captured respondents' level of physical activity performed as part of their work and/or leisure activities.

Alcohol consumption

It is estimated that more than 100 million Americans drink alcohol and that about 10 percent of those who drink have alcohol problems that adversely affect their lives. Studies have shown that alcohol is involved in 10 percent of all deaths in the United States and the mortality rate of those who drink six or more drinks per day is 50 percent higher than the rate in matched controls. Alcohol is also primarily or secondarily implicated in various medical problems, such as cirrhosis, alcoholic hepatitis, and nutritional deficiencies.

Four questions attempted to examine the following characteristics associated with alcohol consumption:

1. Number of drinks—defined as equivalent volume amounts that have an ethanol content of 0.6 oz, which translates into 12 oz of beer, 5 oz of wine, and 1.5 oz of liquor
2. Excessive alcohol consumption—defined as five or more drinks, on a given day, during the last month
3. Drinking and driving
4. Feelings associated with guilt, contemplating reducing the amount of alcohol, and finding that people complain about one's alcohol consumption.

Number 4 is a variant of items used in the CAGE questionnaire (cut down, annoyed by criticism, guilty about drinking, eye-opener drinks) for the detection of alcoholism. Investigators have found that alcohol abusers are more likely to give accurate responses to questions about drinking if they are part of a series of questions on lifestyle that include drinking, smoking, diet, and exercise habits [9]. The CAGE questions may be less likely to trigger defensiveness and denial in the alcoholic.

Mental health

Mental illness, present in at least 20 percent of primary care outpatients, has been shown to result in substantial patient suffering, disability, and use of health care resources. However, recent studies have shown that primary care physicians in office settings fail to diagnose and treat 50 to 75 percent of patients suffering from common mental illnesses.

Five questions were used to evaluate mental health status. They evaluated the two groups of mental illnesses, mood and anxiety disorders, most commonly encountered in the general population and primary care settings [10]. The questions serve as an initial symptom screen for mental disorders and have been previously validated in the Primary Care Evaluation of Mental Disorders (PRIME-MD) study. The items provided a standardized and brief method to assess commonly encountered mental illnesses in primary care settings. HEAR uses two items to screen for mood disorders and three questions to assess anxiety disorder. At least one positive response on either the mood or anxiety questions alerts the clinicians to potential problems.

Smoking

Smoking status is evaluated based on two sets of questions. The first set ascertains smoking history and current status; the second set assesses readiness for smoking cessation. The second set is based on a model of behavioral change developed by Prochaska and Goldstein [8]. The rationale behind this model is that smokers progress through a series of five stages of change: precontemplation, contemplation, preparation, action, and maintenance. However, most health care practitioners think of changing smoking behavior as an overt and discrete process, whereby patients go from smoking to not smoking. Research has shown that, after physicians' interventions, few patients actually move into the nonsmoking category. Traditionally, physicians have defined change as the dramatic movement from chronic, unhealthy behavior to stable, healthy behavior. An example of such a shift would be smokers going from smoking 20 cigarettes a day for 20 years to none a day for the next 20 years. This model attempts to elucidate the process of progressive change, thereby facilitating physicians' attempts to intervene in the process of smoking cessation.

Body weight

Ideal body weight was based on the Body Mass Index, which takes into account age, height, and weight. It is considered more reliable than standard insurance company/actuarial tables because it considers a patient's age. This index was adapted from the *Clinician's Handbook of Preventive Services: Put Prevention into Practice* [11].

Satisfaction and stress

High levels of stress have often been associated with higher levels of morbidity in the general population. Frequency, intensity, and duration of stress were measured with three questions adapted from the 1987 National Health Interview Survey. Three other related questions were used to evaluate the specific needs of military personnel, including satisfaction with life, potential problems with a spouse, and family separation. The first two questions (satisfaction with life in general and marriage) have been used in the Army's Fit to Win survey. The question regarding family separation was developed explicitly for this survey, based on recommendations from OPHSA personnel.

High resource utilization (HRU)

Recent studies have demonstrated that a small proportion of the population accounts for the majority of the medical utilization. More specifically, about 20 percent of the population incurs 80 percent of the medical resources. We developed algorithms to estimate which enrollees were likely to be high utilizers of medical resources. The algorithms were based on discussions with experts in the field and a review of the literature [12 and 13].

Based on this information, 13 categories are used to predict which enrollees were likely to be high resource utilizers. These categories are based on sociodemographic characteristics and health status conditions: age, marital status, self-rated health, cardiovascular disease, drinking behavior, satisfaction with work and family, stress, mental health, absenteeism, number of prescription medications, medical resource utilization frequency, specific chronic conditions, and smoking status.

With the information generated by the HRU algorithm in the HEAR survey, respondents are categorized into three levels—low, medium, and high utilizers of the medical delivery system—based on their predicted level of medical resource utilization. A respondent was considered a high resource utilizer if he answered affirmatively to at least six of the categories.

Chronic conditions

Questions related to the presence of chronic conditions were included in the HEAR instrument both to identify conditions associated with increased use of medical resources (bronchitis/emphysema and arthritis) and to give Primary Care Physicians more information on their patients' health status. The chronic conditions included in the survey are found to be most prevalent in the general population and account for a substantial portion of hospitalizations and ambulatory care visits. The presence of chronic conditions was evaluated by asking patients to consider whether they had ever been told by a health care provider they suffered from any chronic conditions. The categories of chronic conditions included in the survey are cardiovascular disease, cancer, mental health disorders, respiratory

problems, neurologic diseases, diabetes, liver and kidney diseases, and HIV/AIDS. These questions were derived either from the Healthier People Network risk assessment instrument or were developed specifically this survey.

Primary care level categorization

The Office for Prevention and Health Services Assessment convened a panel to develop criteria for assessing the primary care levels (PCLs) for enrollees. Six primary care providers (from both the civilian and military sectors) discussed decision criteria and algorithms used to differentiate levels of primary care needs. These algorithms were to be used to stratify TRICARE enrollees into one of three groups based on their estimated level of primary care complexity:

- Level 1—least complexity, could be provided by nurse practitioners, physician assistants, or general medical officers (GMOs)
- Level 2—moderate complexity, provided by family practice and internal medicine physicians
- Level 3—greatest complexity, often requiring interactions with physician subspecialists.

Panel members received a structured questionnaire to complete before the meeting. Using a consensus panel technique, participants discussed relevant issues among themselves until a final judgment was reached. Based on recommendations from this panel, OPHSA developed a preliminary algorithm. The following eight components were used in determining PCLs: number of prescription medications, self-assessment of general health, mental health, outpatient and inpatient medical resource utilization, age, number of chronic diseases, and number of emergency room visits. All enrollees were classified as “least complexity” (level 1) in each category unless responses to the HEAR questionnaire indicated that a higher level of care may be required. For example, a response of “fair” to the question regarding self-reported health status resulted in assigning the enrollee to the “moderate complexity” level, whereas a response of “poor” resulted in assigning an enrollee to the “greatest complexity” level.

Methods

The first step in surveying the RPOW and control group (CG) populations was to determine who was still alive, and to update administrative information of the survivors. We then grouped survivors on the basis of when they had last been seen at the Mitchell Center. RPOWs were grouped according to whether they had been aircrew for purposes of comparison to the CG (who were also aircrew). Those aircrew not seen in the last 10 years formed one group, those seen more recently made up a second group, and non-aircrew composed a third group. These were mostly former U.S. Army enlisted personnel.

A total of 327 RPOWs had not been seen at the Mitchell Center during the past 10-20 years. We searched various data sources for death records and other information to identify survivors. Ten individuals were identified in this manner as having died recently. About 100 addresses were also updated.

Survey packages included a request to complete the health assessment survey. The letters for the "not-seen-recently" group contained a reminder that the individual had not been seen at the Mitchell Center in recent years and was encouraged to make an appointment.¹ Letters to the recently seen RPOWs and CG members focused mainly on asking for their cooperation in completing the survey.

Survey packages also contained a postage paid return envelope. Completed surveys were returned to the Mitchell Center, and were then forwarded to CNA for processing (i.e., logging the surveys as having been received, and then entering the responses into a Microsoft® Access database). Survey data were supplemented with other information, such as where the RPOW had been captured, for use in the analysis.

-
1. Addressees were informed that the government would pay for transportation and provide a per diem for lodging and meals.

Supplementary information

Additional information about the RPOWs and CG members was gathered from administrative records for use as explanatory variables in the analysis. This information included:

- *Where captured.* Where the POW was captured (North or South Vietnam) is a proxy for degree of mistreatment. In the North, they received somewhat better care because they were politically visible pawns used for political purposes. These were also the officers. POWs in the South were more likely to be enlisted, to be constantly moved from camp to camp, and to receive worse treatment—probably because they had no political value. Those captured in other countries, such as Laos and Cambodia, were grouped with those captured in South Vietnam.
- *Branch of service.* The analysis capitalizes on the USAF RPOWs entering the clinical program some 10 years later. This resulted in longer tenure for USN/USMC officers/aircrew in the program. We use this variable as a “rough” indicator of the effect of *continuity of care* for those seen at the Mitchell Center.
- *Aircrew.* We used this information to sort RPOWs into groups comparable to CG members who were aircrew (pilots).

Comparison population

An additional dataset was available to provide a benchmark for the HEAR survey administered to the RPOWs and the control group. This consisted of a random sample of retired male military personnel. The sample was drawn as part of the administration of the Annual Survey of DoD Health Care Beneficiaries in 1999. We used the responses of those in the same age range as the RPOWs/CG members (50-77 years). This provides only a limited comparison because there were few items in common with the DoD survey.

Results

Response rates

The data collection period was January 2000 through January 2001. Table 2 shows response rates. The overall rate of 75 percent is quite respectable for a mail-out survey, which is typically less than 50 percent. The response rate from the *seen* group was considerably higher than for those *not seen* recently at the Mitchell Center. This might be expected from such an actively involved group.

Table 2. Survey response rates

Group	Sent	Returned	Rate (percent)
Control	114	85	75
RPOW	554	413	75
Seen	345	296	86
Not seen	209	117	56
Overall	668	498	75

Completed surveys were returned to the Mitchell Center and forwarded to CNA for processing. The data were entered into a Microsoft Access database and merged with administrative data provided by the Mitchell Center. The administrative data, such as branch of service, were used to sort respondents into analytic groupings.

Demographics

Table 3 summarizes demographic information for survey respondents.

As mentioned earlier, the control group (CG) was matched to RPOWs, who were aircrew, on the basis of age and type of aircraft. Among survey respondents, those seen recently at the Mitchell Center are demographically similar to CG respondents. The former

U.S. Army non-aircrew enlisted respondents are younger and more likely to be divorced.

Table 3. Demographics

Demographic characteristic	Control group	RPOWs		
		Air/officer/ seen	Air/officer/ not seen	Other
Age (years)	63	63	59	56
Percentage over age 64	44	43	24	16
Weight (lb)	190	189	192	198
Marital status (percentage)				
Never married	1	1	0	4
Married	90	91	86	75
Separated	3	1	3	2
Divorced	4	6	9	17
Widowed	3	1	3	2
Race (percentage)				
Caucasian	99	97	96	81
Black	0	1	0	9
Other	1	2	4	9

Source of health care

Although the Mitchell Center does provide health care in the form of annual physical exams and referrals, it is not the primary source of care for RPOWs (or CG members). For those who are retired military personnel, those under the age of 65 have access to health care through the Military Health Care System (MHCS), now TRICARE, and the Veterans' Administration (VA). As shown in table 4, patterns of health care sources differ widely across the groups.

Only 16 percent of the *non-aircrew* are over 64 years of age, whereas 21 percent of this group reports Medicare as a source of health care. Assuming they are reporting this accurately, these results suggest that at least 5 percent (21 – 16) are physically or mentally disabled to qualify for Medicare.

Table 4. Source of health care (percentage of group with source of care)

Group	MHCS ^a	VA	Civilian HMO	Civilian FFS ^b	Medicare	Medicaid	Summary		
							VA or military	Any civilian	Both
Control	46	12	13	40	35	0	52	73	26
RPOW									
Seen	49	66	15	31	34	1	80	67	48
Not seen	37	45	18	38	16	1	64	67	34
Non-aircrew	32	60	30	26	21	4	68	60	32
Total	44	53	17	33	30	1	72	67	40

a. MHCS indicates Military Health Care System (TRICARE).

b. FFS indicates fee for service.

RPOWs recently seen at the Mitchell Center have the highest rate of use of military and VA care, and are most likely to have multiple sources of care (table 5).

Table 5. Multiple sources of care

Group	Number of sources of care			
	0	1	2	3+
Control	1	60	29	9
RPOWs				
Air/officer/seen	0	33	37	30
Air/officer/not seen	3	51	30	16
Other RPOWs	0	46	39	16
Total	1	42	35	22

Perceived health status

The survey asked respondents to rate their health status: "Would you say that your health in general is: (1) poor, (2) fair, (3) good, (4) very good, or (5) excellent?" We scored the health status as 1 if the person evaluated his health as good, very good, or excellent; otherwise, the score was 0. Using logistic regression, we compared the resulting proportions of those rating their health as good or excellent, adjusting for age differences. Table 6 shows the proportions, for the various

analytic groups used in the analysis. Statistically significant differences between the various RPOW groups and the control group are indicated by an asterisk (*). We did not perform significance tests for the TRICARE, RPOW, and control groups.

Table 6. Percentage of group whose self-reported health status is good or better

Group	Percentage of group reporting good or better health
TRICARE retired males, 50 to 77 years of age ^a	79
Control group (CG)	89
Air officers	
Seen	82*
Not seen	86
Non-aircrew	61*
Where captured	
North Vietnam	80*
South Vietnam	80*
Pilots seen	
USAF	82*
USN/USMC	82*

a. Those receiving health care under the Department of Defense Military Health Care System, now TRICARE.

* Statistically significant ($p < .05$) difference from CG.

The results suggest that the control group members perceive their health status as significantly better than the RPOWs as a whole, those air/officer/aircrew recently seen at the Mitchell Center, and the non-aircrew, in particular. Among the RPOWs, there were no significant differences related to where captured, or between USAF and USN/USMC aircrew recently seen at the Mitchell Center.

Preventive care

Few significant differences were observed in levels of preventive care received (table 7). The one exception was in time since last testicular exam for those not seen recently at the Mitchell Center. This group

was examined on average between 1 and 2 years ago, compared with less than 1 year for CG members. Differences in general health were related to high blood pressure (BP). A higher incidence of hypertension was reported for the *Other* group (46 percent, compared with 32 percent for the control group and the remaining RPOWs). A greater percentage of USAF RPOWs reported taking BP medication on a regular basis than USN/USMC aircrew recently seen at the Mitchell Center (55 vs. 35 percent). In contrast, the measures that were available for the retired male population indicate that the RPOWs are experiencing a much greater level of preventive care.

Table 7. Preventive care and general health (proportion of group)

Measure	TRICARE retired males (50-77)	CG	Air officer seen	Air officer not seen	Non- aircrew	North capture	South capture	USAF seen	USN/ USMC seen
Blood pressure (BP) check									
Past 12 months	0.91	0.95	0.98	0.91	0.98	0.98	0.96	0.99	0.96
Years since	0.72	0.65	0.55	0.70	0.55	0.55	0.59	0.52	0.60
Told BP high									
Ever	0.27	0.32	0.32	0.32	0.46*	0.31	0.35	0.35	0.29
2+ times	N/A	0.28	0.30	0.26	0.38	0.28	0.31	0.33	0.25
BP medication									
Ever take	N/A	0.27	0.28	0.26	0.37	0.26	0.30	0.32	0.22
Now take	N/A	0.24	0.25	0.24	0.30	0.22	0.27	0.29	0.20
Regularly take	N/A	0.45	0.47	0.46	0.55	0.41	0.50	0.55#	0.35*#
Cholesterol check									
Ever	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Past 12 months	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Years since	1.12	0.73	0.75	1.06	1.04	0.80	0.86	0.75	0.74
Told cholesterol high	N/A	0.60	0.66	0.57	0.62	0.68	0.62	0.66	0.67
Years since rectal exam	N/A	1.05	0.93	1.33	1.33	1.01	1.07	0.96	0.89
Tetanus shot in past 10 years	N/A	0.73	0.76	0.64	0.74	0.75	0.72	0.76	0.74
Years since testicular exam	N/A	0.81	0.86	1.38*	1.06	1.00	0.98	0.90	0.76

N/A indicates not available.

Statistically significant difference ($p < .05$) for contrast: * control; # USAF vs. USN/USMC.

Physical activity

The level of physical activity is used as an indicator of general fitness. Several significant differences between the analytical groups were observed (table 8). Those in the *non-aircrew* group report that a greater degree of physical activity is required at work relative to those in the CG. However, the *non-aircrew* group tends to engage in strenuous physical activity less frequently. Those captured in the South report engaging in strenuous activity slightly less frequently than those captured in the North, and USAF RPOWs report less strenuous physical activity on the job in comparison to those in the USN/USMC group.

Table 8. Physical activity

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
Times/week engage in hard physical activity	2.52	2.33	1.92*	1.80*	2.33	2.13*+	2.26	2.49
Hard physical activity at job/work	2.81	2.90	2.57	3.00*	2.73	2.90	2.74#	3.12#
Hard physical work in daily activity (not work)	2.12	2.12	2.04	2.21	2.14	2.11	2.09	2.21

Statistically significant difference ($p < .05$) for contrast: * control; + captured in South; # USAF vs. USN/USMC.

Alcohol and tobacco use

RPOWs, in general, are as likely to be smokers as retired males from the general population (77 vs. 76 percent). RPOWs, particularly the former U.S. Army, non-aircrew, tend to be heavier smokers than those in the control group. They were more likely to have been smokers (ever smoked 100 or more cigarettes), smoke more often, and smoke more cigarettes. On the plus side, they have good intentions of stopping smoking. However, many have tried to stop before and presumably did not succeed (see table 9). About 80 percent of CG members and RPOWs were smokers at time of capture.

Table 9. Smoking and alcohol use

Measure	TRICARE retired males (50-77)	CG	Air officer seen	Air officer not seen	Non- aircrew	North capture	South capture	USAF seen	USN/ USMC seen
Smoking									
Ever smoked 100+ cigarettes	0.76	0.59	0.75*	0.72	0.91*	0.74*	0.78*	0.73	0.79
How often smoke cigarettes (1=daily, .5=some days, 0=not)	N/A	0.06	0.08	0.17*	0.41*	0.10	0.16*	0.07	0.07
Number cigarettes smoke/day	N/A	0.82	0.91	3.49*	9.57*	1.67	2.89*	0.77	1.01
Intend quit smoking Next 6 months	N/A	0.02	0.05	0.07	0.25*	0.08	0.08*	0.05	0.05
Next month	N/A	0.01	0.02	0.05	0.14*	0.05	0.05	0.03	0.02
Tried quit smoking past 12 months	N/A	0.01	0.04	0.08	0.18*	0.05	0.07*	0.05	0.04
Alcohol									
Days alcohol past 2 weeks	N/A	5.14	5.32	5.03	3.71	5.21	5.03	5.24	5.39
How many drinks past 2 weeks	N/A	2.12	2.16	2.31	2.50	2.27	2.20	2.18	2.08
Times drive and drink past month	N/A	0.13	0.08	0.12	0.12	0.03*+	0.12+	0.11	0.03
Felt should cut down in past month	N/A	0.15	0.14	0.17	0.16	0.17	0.14	0.14	0.11
Complaints about during past month	N/A	0.02	0.03	0.01	0.04	0.02	0.03	0.03	0.02
Felt guilty about drinking past month	N/A	0.02	0.04	0.08	0.07	0.09	0.04	0.03	0.03
Ever 5+ drinks/1 day	N/A	0.12	0.12	0.14	0.12	0.12	0.12	0.10	0.14

N/A indicates not available.

Statistically significant difference ($p < .05$) for contrast: * control; + captured in South.

Few differences in alcohol consumption were reported. The one exception was a significantly lower rate of drinking while driving for those captured in the North (3 vs. 13 percent for CG members and RPOWs in general.)

Social relations

RPOWs report less satisfaction with their social lives in general, and a greater frequency of serious problems dealing with family members (see table 10). There was no significant correlation between *family separation* and the two social relation items.

Table 10. Social relations

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USMC seen
Satisfied with social life (scale: low-high)	3.07	2.99	2.80*	2.75*	2.92	2.92	3.01	2.98
Frequency serious problems dealing with family (scale: low-high)	1.80	2.03*	2.08*	2.16	1.95	2.09*	2.06	1.98
Family separation 30+ days past year (0=no; yes=1)	0.07	0.08	0.13	0.16	0.14	0.09	0.06	0.12

Statistically significant difference ($p < .05$) for contrast: * control.

Mental health

RPOWs generally report higher levels of depression, anxiety, and worry than control group members (table 11). Former U.S. Army non-aircrew report the highest levels of psychological problems—far exceeding those of the other RPOWs and the CG. Although a greater proportion of those in the *Other* group reported seeing a mental health professional in the past 12 months (0.28), this was not significantly different from the rate reported by CG members—when we account for age differences. However, when we don't account for age, the difference is statistically significant ($p < 0.05$). This suggests that age plays a moderating effect on the likelihood of having seen a mental health professional.² Younger survey respondents were more likely to have seen a mental health specialist, and those in the *Other*

2. The age variable does not have a statistically significant coefficient in the logit analysis.

group tend to be younger. However, because this age relationship also holds for those in the aircrew/officer RPOW groups, age becomes the dominating factor in explaining the variation in having seen a mental health professional.

Table 11. Mental health related items (proportion reporting symptom)

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
Little pleasure doing things	0.09	0.14	0.18	0.37*	0.14	0.19*	0.12	0.13
Feeling depressed	0.08	0.14*	0.20*	0.32*	0.17*	0.18*	0.12	0.15
Anxiety	0.13	0.19	0.28*	0.32*	0.23*	0.22*	0.21#	0.12#
Worrying	0.13	0.22*	0.25	0.35*	0.24*	0.25*	0.21	0.21
Panic attack	0.02	0.02	0.07	0.14*	0.05	0.05		
Saw mental health professional past 12 months	0.12	0.18	0.08	0.28	0.14	0.19	0.17	0.19

Statistically significant difference ($p < .05$) for contrast: * control; # USAF vs. USN/USMC.

Recent illnesses

Another group of measures related to general health and fitness is summarized in table 12. RPOWs generally report greater difficulty than CG members in walking or not being able to walk a straight line. This was especially true for those in the *non-aircrew* group. Those captured in the South also show a greater tendency for difficulty in walking.

Table 12. Recent illnesses and difficulty walking

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
Days stayed in bed more than half day due to illness past 2 weeks	0.12	0.17	0.03	0.46	0.11	0.21	0.20	0.12
Days missed 5+ days work past 2 weeks	0.11	0.15	0.09	0.35	0.05+	0.20+	0.13	0.19
Difficulty walking (prop. "yes")	0.02	0.10*	0.08	0.16*	0.06	0.12*+	0.11	0.09

Statistically significant difference ($p < .05$) for contrast: * control; + captured in South.

Those who reported having difficulty walking were also more likely to have seen a health care provider for a bone, joint, back, or muscle problem, during the past year (67 percent).

Medications

In table 13 we show the level of medication use as the number of prescriptions being taken, and the proportion of each group selecting the upper limit of the scale (6+ medications). We found that those in the *Other* group were more than 3 times as likely as those in the control group to indicate the maximum number of medications (16 vs. 5 percent). This is another indication that the former U.S. Army non-aircrew are in the poorest health.

Table 13. Number of medications

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
Number different meds	1.46	1.80	1.60	2.55*	1.69	1.93*	1.87	1.62
6+ meds	0.05	0.06	0.08	0.16*	0.05	0.08	0.06	0.06

Statistically significant difference ($p < .05$) for contrast: * control.

Doctor visits

Another indication that the RPOWs are less healthy than CG members is evidenced by the level of utilization of their health care (assuming equal access). Table 14 compares the various analytic groups with respect to outpatient and ER visits and hospital stays.

All RPOWs and control group members had at least one doctor visit during the past 12 months. This is comparable to the TRICARE sample of male retirees of the same age. On the other hand, the use of the ER by the RPOWs and CG members is significantly below that of the male retirees in the general population. We also see that non-aircrew, former enlisted RPOWs are more likely to be hospitalized, and for longer stays, in comparison to the control group.

Table 14. Health care visits

Measure	TRICARE retired males (50-77)	CG	Air officer seen	Air officer not seen	Non- aircrew	North capture	South capture	USAF seen	USN/ USMC seen
Outpatient visits									
Any past 12 months	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Number past month	N/A	0.71	1.04*	0.81	1.33*	1.06*	1.03*	1.06	0.93
Number past 12 months	N/A	3.52	5.00*	4.13	5.55*	5.06*	4.85*	5.01	4.73
ER visits									
Any past 12 months	0.23	0.15	0.19	0.14	0.25	0.19	0.19	0.19	0.19
Number past 12 months	N/A	0.26	0.31	0.21	0.56	0.38	0.31	0.30	0.30
Inpatient stays									
Any past 12 months	N/A	0.08	0.13	0.05	0.18*	0.13	0.12#	0.15#	0.07
Number nights past 12 months	N/A	1.79	4.36*	5.75*	4.33*	5.14*	4.20*#	3.75#	6.36
Number episodes past 12 months	N/A	1.00	2.19*	1.62	2.28	2.12*	2.17*#	1.85#	3.43

N/A indicates not available.

Statistically significant difference ($p < .05$) for contrast: * control; # USAF vs. USN/USMC.

Chronic conditions

Survey respondents were asked if they had ever been told by a health care provider that they had any of the 15 conditions shown in table 15. In addition, they were asked if they had seen a health care provider on two or more occasions because of an orthopaedic problem, such as a bone, joint, back, or muscle condition. And, finally, there were two health-related family history questions.

Again the data suggest that the RPOWs are in poorer health than the control group members. Note the higher incidence of heart disease/angina for the RPOWs, compared with the control group. Note that there were no significant differences in family history of coronary disease between the groups. (This measure was used as a statistical control when comparing rates of heart attacks and heart disease/angina between groups.)

Table 15. Chronic conditions

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
Chronic condition								
Diabetes	0.11	0.05	0.09	0.09	0.06	0.07	0.06	0.04
Stroke	0.02	0.06	0.03	0.07	0.04	0.06	0.06	0.04
Heart attack	0.05	0.08	0.05	0.16*	0.06	0.10	0.08	0.10
Emphysema/ chronic bronchitis	0.01	10.08*	0.13*	0.18*	0.07+	0.11*+	0.06	0.11
Arthritis	0.39	0.65*	0.47	0.57*	0.71*+	0.57*+	0.61	0.71
Parkinson's	0.04	0.03	0.04	0.00	0.01	0.03	0.02	0.04
Depression	0.12	0.14	0.13	0.38*	0.18	0.17	0.10	0.18
Anxiety/personality disorder	0.07	0.09	0.07	0.33*	0.12	0.12	0.10	0.09
Cancer	0.13	0.14	0.14	0.05	0.11	0.14	0.13	0.15
Heart disease/angina	0.09	0.16	0.18*	0.19*	0.18*	0.17*	0.17	0.17
Liver disease	0.01	0.04	0.00	0.05	0.04	0.03	0.05	0.02
Kidney disease	0.01	0.01	0.03	0.04	0.03	0.02	0.00	0.00
Stomach ulcer	0.06	0.06	0.11	0.16*	0.12	0.07	0.06	0.06
Asthma	0.06	0.05	0.05	0.11	0.07	0.06	0.05	0.06
HIV or AIDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Related information								
Saw provider for ortho. problem past 12 months	0.20	0.41*	0.34*	0.39*	0.48*	0.37*	0.43	0.36
Dependent under 18 with serious medical condition	0.01	0.01	0.00	0.04	0.01	0.01	0.01	0.01
Close family member with coronary problem	0.45	0.49	0.45	0.60	0.54	0.48	0.46	0.53

Statistically significant difference ($p < .05$) for contrast: * control; + captured in South.

Table 16 shows the distributions and means of the number of chronic conditions reported for each of the analytic groups. Particularly striking is the relative frequency of chronic conditions reported by those in the *Other* (non-aircrew) group.

Table 16. Number of chronic conditions

Number of chronic conditions	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
0	0.34	0.19	0.32	0.21	0.14	0.24	0.23	0.15
1	0.36	0.39	0.29	0.25	0.43	0.32	0.39	0.39
2	0.13	0.21	0.17	0.07	0.16	0.19	0.20	0.24
3	0.13	0.10	0.09	0.21	0.12	0.11	0.09	0.11
4	0.02	0.04	0.09	0.09	0.08	0.05	0.04	0.04
5	0.01	0.04	0.03	0.14	0.06	0.05	0.03	0.04
6	0.00	0.03	0.00	0.00	0.00	0.02	0.03	0.02
7	0.00	0.00	0.01	0.02	0.01	0.01	0.00	0.01
10	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Mean	1.16	1.63*	1.50*	2.37*	1.78*	1.69*	1.54	1.72

Statistically significant difference ($p < .05$) for contrast: * control.

Resource utilization

We used the procedure followed by TRICARE to classify enrollees as to the level of primary care anticipated based on the medical information contained in the HEAR survey. The levels correspond to complexity of care, and the degree of specialization required by the provider. While level 1 (low) care can be provided by a nurse practitioner or Corpsman, level 2 (medium) would require a family practice or internal medicine physician. Level 3 (high) care often requires a specialist. As shown in table 17, RPOWs require a greater degree of specialized care than control group members. Note that neither group falls into the low level of care category, as their age alone (50+) would place them in at least category 2.

Table 17. Estimated primary care level distribution

PCL	Control group	Seen	Not seen	Non-aircrew
Low	0.00	0.00	0.00	0.00
Medium	0.67	0.55	0.67	0.47
High	0.33	0.45	0.33	0.53

Using the algorithms developed for TRICARE, RPOWs and CG members were placed in resource utilization (RU) categories. Though most of the survey respondents fall into the "low" category, a greater proportion of RPOWs fall into the medium and high utilization categories (18 vs. 8 percent for CG members). These results (shown in table 18) indicate that the RPOWs are more expensive to care for than control group members. Whether the RPOWs require more expensive care than same-aged males from the general population is a question for further research (pending availability of HEAR data from the general population).

Table 18. High resource utilization distribution

HRU	Control group	Seen	Not seen	Non-aircrew
Low	0.93	0.85	0.82	0.65
Medium	0.04	0.08	0.14	0.18
High	0.04	0.08	0.04	0.18

We recoded the PCL and HRU measures using a 1-to-3 scale corresponding to the low, medium and high categories/levels, respectively, for purposes of testing differences between the analytical groups (table 19).

Table 19. Primary care level and resource utilization indicators

Measure	CG	Air officer seen	Air officer not seen	Non-aircrew	North capture	South capture	USAF seen	USN/USMC seen
High resource util.	1.11	1.23*	1.22*	1.53*	1.26*	1.28*	1.22	1.22
HRU sum	1.87	2.55*	2.47*	3.75*	2.53*	2.76*	2.53	2.51
Primary care level	2.33	2.45*	2.33	2.53*	2.42*	2.44*	2.46	2.39
PCL disease	1.31	1.41	1.45	1.42*	1.44	1.41	1.48#	1.25#
PCL ER	1.16	1.20	1.13	1.26	1.19	1.20	1.19	1.19
PCL general	1.11	1.21*	1.16*	1.46*	1.24*	1.23*	1.20	1.21
PCL hospital	1.00	1.12*	1.05	1.11*	1.13*	1.10*	1.10	1.12
PCL medication	1.67	1.81	1.64	1.81*	1.78	1.78*	1.85	1.71
PCL mental	1.42	1.60*	1.51	1.89*	1.55	1.65*	1.57	1.61
PCL outpatient util.	1.02	1.06	1.01	1.14	1.08	1.06	1.06	1.06

Statistically significant difference ($p < .05$) for contrast: * control; # USAF vs. USN/USMC.

These results are shown for the subcategories that make up the overall PCL and HRU measures. The range of possible values for the PCL subcategories is 1-to-3. The *HRU sum* measure is a count of the number of resource utilization areas (17)³ composing that measure.

RPOWs tend to use significantly more medical resources, and require a greater level of care than control group members (5 out of 7 areas). The former U.S. Army enlisted (non-aircrew) tend to need the greatest level of care and use significantly more medical resources than any other group.

3. The 17 areas are gender, marital status, health status, hypertension, cigarette smoking, alcohol use, family relations, stress, mental health, frequency of being bed-ridden, medications, medical visits, ER utilization, hospitalizations, coronary conditions, emphysema, and arthritis.

Conclusions

This is a descriptive study of the general health status of prisoners of the Vietnam War, nearly 25 years after their repatriation. About 75 percent of the surviving RPOWs provided information by responding to a health status survey. We have shown that the RPOWs are in poorer health than a matched control group of naval aviators and a group of like-aged retired military from the general population.

Participation in the Mitchell Center clinical program is voluntary. Many of the RPOWs (about 66 percent) receive periodic checkups there. These participants tend to be in somewhat poorer health than those who do not rely on the Mitchell Center for checkups and medical diagnosis. This may reflect a tendency for those with more health problems to seek out the resources of the Mitchell Center.

Some RPOWs seen at the Mitchell Center have been receiving this health care longer than others, i.e., Navy vs. Air Force pilots. However, we saw few differences in the level of health indicators between these two groups. These results suggest that those in poorer health do seek care from the Mitchell Center, but continuity of care doesn't necessarily lead to better outcomes on average. That is not to say that individuals do not benefit from the program; however, this issue was not the focus of this study. Longitudinal data would be needed to assess the specific health benefits provided by the Mitchell Center program.

These results also indicate that RPOWs can be expected to use more resources, and require more specialized medical care, than control group members. In addition, it is possible to identify specific areas of concern for particular RPOW subgroups (mental health, medication use, etc.).

Finally, 33 RPOWs not seen at the Mitchell Center in the 10-15 years preceding this study have since made contact and had physicals. This implies that this study has served its secondary purpose—to encourage nonparticipants to access and use the Mitchell Center resources.

Appendix: Letters to survey participants

This appendix contains the letters sent to RPOWs not seen (nonparticipants), those seen recently at the Mitchell Center (participants), and control group members.



DEPARTMENT OF THE NAVY
NAVAL OPERATIONAL MEDICINE INSTITUTE
220 HOVEY ROAD
PENSACOLA, FLORIDA 32508-1047

IN REPLY REFER TO

January 12, 2000

Dear Non-participant;

A focus of the Mitchell Center is to identify long-term medical consequences of having been a POW. Findings to date indicate that your experience may make you more susceptible to certain medical conditions than those in the general population. It is important that the military health care system know of your specific problems and needs, not only to help you, but also to benefit future POWs.

My purpose in contacting you is twofold. I would like to invite you to participate in the POW Follow-up Study, a program providing free annual physical exams and counseling for RPOWs, at the Naval Operational Medicine Institute in Pensacola, Florida. If you would like to participate in this program, please contact Helen Royal at 850-452-2157, ext. 1006, for your appointment and military orders for funded travel to Pensacola. Helen or I will be glad to answer any questions you may have.

The second purpose for this letter is to ask you to complete the enclosed *Health Assessment Survey*. Your response to the survey is, of course, confidential. It will be used to assess the medical needs of RPOWs and to help determine the resources needed to provide for your future health care.

I ask that you take the time to answer the survey and send it back in the enclosed prepaid return envelope. Doing so could help maintain your health, and will almost certainly assist in understanding the needs of your fellow repatriated POWs as a group.

A handwritten signature in black ink, appearing to read "Michael R. Ambrose", is located below the main body of the letter.

Michael R. Ambrose
Captain, Medical Corps, United States Navy
Director, Robert E. Mitchell Center for Prisoner of War
Studies

Encl.
Health Assessment Survey



DEPARTMENT OF THE NAVY
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220 HOVEY ROAD
PENSACOLA, FLORIDA 32508-1047

IN REPLY REFER TO

January 12, 2000

Dear Participant;

As a participant in the Mitchell Center POW Follow-up Study, I ask you to complete the enclosed *Health Assessment Survey*. Your response to the survey is of course confidential. It will be used to help evaluate the medical needs of repatriated POWs and to help determine the resources needed to provide for your future health care.

I ask that you take the time to answer the survey and send it back in the enclosed prepaid return envelope. Doing so could help maintain your health, and will almost certainly assist in understanding the needs of your fellow repatriated POWs as a group.

A handwritten signature in black ink, appearing to read "Michael R. Ambrose", is centered below the text.

Michael R. Ambrose
Captain, Medical Corps, United States Navy
Director, Robert E. Mitchell Center for Prisoner of War
Studies

Encl.
Health Assessment Survey



DEPARTMENT OF THE NAVY
NAVAL OPERATIONAL MEDICINE INSTITUTE
220 HOVEY ROAD
PENSACOLA, FLORIDA 32508-1047

IN REPLY REFER TO

January 12, 2000

Dear Control Group member;

The Robert E. Mitchell Center for POW Studies is doing an assessment of the health status and health care needs of surviving POWs from the Vietnam era. The assessment will be used to help evaluate the medical needs of repatriated POWs and to help determine the resources needed to provide for their future health care.

In your role as a member of the control group providing benchmark information for POW studies, I ask that you also complete the enclosed *Health Assessment Survey* and send it back in the enclosed prepaid return envelope. Your responses to the survey are of course confidential.

A handwritten signature in black ink, appearing to read "MR Ambrose", is centered below the main text.

Michael R. Ambrose
Captain, Medical Corps, United States Navy
Director, Robert E. Mitchell Center for Prisoner of War
Studies

Encl.
Health Assessment Survey

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Distribution list

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